REDJACKET[®]

Field Service Bulletin

Red Jacket 500 E. 59th St. Davenport, Iowa 52807 Tel: (800) 262-7539 (319) 391-8600 Fax: (800) 304-7502 Date: January 23, 2001 Attention: Red Jacket Distributors

Subject: Cooling Principle of the LPG Submersible Pump

The submersible pump motors are explosion-proof type (EEx ed IIB T3) designed to permit the LPG fuel to flow through and around the motor.

A calculated amount of LPG fuel flows through the motor for cooling and lubrication of the unit, including bottom and top bearings.

The pumped LPG liquid flows from the pump-unit through four inlet-holes into the motor unit. The liquid flows between the stainless-steel shell and the stator to the receptacle housing (top section of the motor) and is cooling the motor.

The bottom-end housing (with bottom bearing) is installed with two so-called breathers (flame barrier). Approximately 20 liters/min. liquid is pressed through the two inlet breathers in the bottom-end housing.

Through the liquid groove in the bearing, this amount of liquid is forced between the rotor and the stator to the upper-end housing and lubricates the motor. Through the liquid groove of the top bearing, installed in the upper-end housing, the liquid passes through the breather (flame-barrier) installed in the receptacle housing. This amount of liquid passes through a non-adjustable bypass back into the manifold.

Maximum temperature increase, caused by the cooling of the motor section, is approximately 12° C above ambient temperature of the LPG liquid, at normal working circumstances.

In practice, the maximum temperature of the liquid passing the internal bypass never exceeds the temperature of 35 -38° C (ambient temperature of liquid between 5° C and 26°C).

The section with the pigtail (discharge head) consists of a metal body (Ex 'd' flameproof enclosure) and electrical connections (Ex 'e' increased safety). The wires in the connectors are cast in epoxy. The stator is fitted with a containment shell of sheet metal and the windings are fully cast in epoxy.

General:

- Never run a submersible pump dry or below a minimum differential pressure of 4 Bar (400kPa)
- Never run a submersible pump below minimum required flow-rate
- Temperature rate: 45° C to + 40° C
- System pressure: Max. 25 Bar
- Technical installations: According to CEN/TC 286/WG 6/SG 6 N 23 R12
- Electric connection: According to local regulation.
- NEN 1010 & NEN 3413 (Electrical components in Hazardous Areas)
- VDE 0100 & VDE 0165 (Electrical components in Hazardous Areas)

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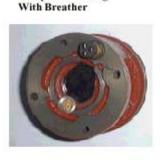
Specifications Submersible Pumps:

Model No	<u>Volts</u>	Hz	<u>PH</u>	HP	RPM	<u>FLA</u>	<u>SFA</u>	Length (ex. Discharge-head)
P300V17	380-415	50	3	3	2875	5.4	5.4	625mm + 795mm = 1420mm
P500V17	380-415	50	3	5	2875	8.8	8.8	780mm + 1030mm = 1810mm

Design specifications:

LPG300V17-21 70 liter/min by 6.8 Bar (max. efficiency) Max pressure 9.2 Bar Capacity Internal bypass at max. pressure: liter/min Minimum flow; not required. Designed for 2 nozzles of 35 liters/ min. simultaneously.

LPG500V17-24 130 liter/min by 8.1 Bar (max. efficiency) Max pressure 11.75 Bar Capacity Internal bypass at max. pressure: liter/min Minimum flow 25 liters per minute Designed for 4-5 nozzles of 35 liters/min. simultaneously or 150 liters/min for one nozzle.



Receptacle housing



Liquid groove

Bottom-end housing with bearing and breather



Shaft Rotor

